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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

RODRIGUEZ, ARMANDO

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n No.

09/945,370

Applicant(s)

FARMER, JASON N.

Examin r

Armando Rodriguez

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.


- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

  
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TECHNOLOGY CENTER 2800

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: .

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the array waveguide grating must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

Claims 5,24 and 30 are objected to because of the following informalities: In a Markush group type claim, it is improper to use "comprising" instead of "consisting of". See MPEP 2173.05(h). Appropriate correction is required.

Claim 11 is objected to because of the following informalities: the focusing lens should read as first focusing lens and second focusing lens. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 18 and 37 are rejected under 35 U.S.C. 101 because

the claimed invention is directed to non-statutory subject matter. Claim 18 pertains to an algorithm, recited as "a learning algorithm". How does this algorithm learn? Is it by statistics, since the code for analyzing of claim 12 does not define the procedure for the learning algorithm and it is interpreted by the examiner that applicant is merely claiming an algorithm.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The use of the phrase "***being operable***" throughout the claims does not describe structural connection or relationship.

Claims 2,27 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: no structure has been recited for establishing an external cavity.

Claims 3,28 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: a collimating optical assembly, a dispersive element and a partial reflector.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: applicant recites two focusing lens, thereby the element "a focusing lens" has been structurally related with the other elements of the claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,8,12-20,24,25 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Onaka et al (PN 5,894,362).

Regarding claim 1,8,26

Figure 5 illustrates an array of laser diodes (24), where each laser diode is electrically connected to driving circuit (26), which controls the current, the laser array are coupled to an optical spectrum monitor, which is coupled to control circuit (36) for controlling the driving circuits in accordance to the optical spectrum signal. See column 6 lines 40-68 and column 7 lines 1-35. Column 8 lines 39-43, disclose that the laser array system can be used to pump a nonlinear amplifier (38), which will provide Raman effects.

Regarding claims 12-19,33-38,

Figure 8 illustrates the components of optical spectrum monitor (34), which includes a photodetector array (10) and a signal processing circuit (14). Column 9 discloses the processing unit analyzing the power levels.

Regarding claim 20,

Column 5 lines 19-23, discloses a wavelength range of 1535 nm – 1560 nm.

Regarding claims 24,25,

The array of lasers, are laser diodes (24), which are commonly made of GaAs and are edge emitting lasers.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-7,9-11,21-23,27,39-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onaka et al (PN 5,894,362) in view of Mead et al (PN 6,456,756).

Regarding claim 1,2,6,10,11,27,39,42-45,

In figure 5 Onaka et al illustrates an array of laser diodes (24), where each laser diode is electrically connected to driving circuit (26), which controls the current, the laser array are coupled to an optical spectrum monitor, which is coupled to control circuit (36) for controlling the driving circuits in accordance to the optical spectrum signal. See column 6 lines 40-68 and column 7 lines 1-35. Column 8 lines 39-43, disclose that the

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laser array system can be used to pump a nonlinear amplifier (38), which will provide Raman effects.

Onaka et al does not disclose an external cavity providing feedback to the gain elements.

In figure 7 Mead et al illustrates a laser system having a laser diode array (403) coupled to a diffraction grating (411), an output coupler (407) and an optical amplifier (415) forming an external cavity the external cavity including focusing lens (409) and (413), diffraction grating (411). In column 6 lines 4-9 suggest replacing individually pump laser diodes with laser array (403).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to the laser diodes of Onaka et al with the laser diode array, which forms the external cavity, as disclosed by Mead et al because it would provide a single output beam having predetermined characteristics.

Regarding claim 3,28,

The external cavity does include a collimating element, a dispersive element and a partial reflector.

Regarding claim 4,29,41,

The output beam is coupled to optical amplifier (415) by lens (413), where the optical amplifier can be a fiber made of silica as described in claim 4.

Regarding claim 5,30,

The external cavity does include a diffraction grating (411).

Regarding claim 7,31,32,40

Column 10 lines 20-33 disclose the use of a microlens (2101) within the external cavity, as illustrated in figure 20.

Regarding claim 9,46-49

Figure 8 illustrates the components of optical spectrum monitor (34), which includes a photodetector array (10) and a signal processing circuit (14). Column 9 discloses the processing unit analyzing the power levels.

Regarding claims 21-23,

Onaka et al discloses the claimed invention except for the wavelength ranges of claims 22 and 23, but does disclose the wavelength range of 1535 nm – 1560 nm. It would have been obvious to one having ordinary skill in the art at the time the invention was to obtain these working ranges, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. **In re Aller, 105 USPQ 233.**

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Armando Rodriguez whose telephone number is (703) 308-6218. The examiner can normally be reached on 10-hour day / M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.




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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-4881.



Armando Rodriguez  
Examiner  
Art Unit 2828



Paul Ip  
Supervisor  
Art Unit 2828

AR/PI